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ABSTRACT

The main features of international regulations on radio communications of the International Telecommunication Union are summarized and the possible effects on these regulations of the World Administrative Radio Conference of 1979 (WARC-79) are discussed in this paper. It is noted that while the international radio regulations are regarded as adequate by some countries, developing countries have difficulty in obtaining access to the radio spectrum since it is congested by the earliest users. Results of the WARC-79 that dealt with improving these regulations are reviewed in the following areas: (1) modifications of the table of frequency allocations and the associated procedures designed to facilitate the application of these modifications, (2) adoption of new procedures designed to facilitate access to the spectrum by the developing countries, and (3) the decision to convene conferences for planning space services and short wave broadcasting services. It is noted that compromises were reached consisting of a procedure that gives priority to the requirements of the developing countries without dividing up the spectrum. (MKM)

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"INTERNATIONAL RADIO REGULATIONS RESULTING FROM WARC 1979"

Prepared for the 1980 Annual Conference of the
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by

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DISCUSSION GROUP 2
SESSION B

International Radio Regulations resulting from
WARC 1979

Thanks to the activity of such bodies as the I.I.C., the international regulation of radiocommunications is becoming better known by those directly or indirectly interested in communication. The international regulation of radiocommunications is conducted within the International Telecommunication Union, having as its basic instrument the Convention to which the Radio Regulations are annexed. It might be useful to summarize briefly the main features of these Regulations, in order to describe the modifications that have just been made to them, before attempting to outline some of the future prospects.

Among the thousands of legal-technical provisions contained in the Regulations, the following principles may be singled out:

- The frequency spectrum shall be used in an orderly manner, in accordance with the distribution of bands shown in a "Table of Frequency Allocations".
- All countries have free access with equal rights to any part of the spectrum.
- No frequency assignment can be used by any individual or enterprise without a licence issued by the government of the country having jurisdiction over the individual or enterprise.
- The rights and obligations entailed by the use of a frequency are derived from its registration by the International Frequency Registration Board (I.F.R.B.) as the result of a technical examination, with specific characteristics and the date of its notification.
- All problems of harmful interference between registered assignments must be settled through cooperation between the countries concerned, the assistance of the I.F.R.B. may be requested in seeking a solution of such a problem.

The principles summarized above are regarded by some as adequate to guarantee equal rights for all countries and to facilitate access to the spectrum. Others consider that, although this is theoretically true, matters are quite different in practice, since the spectrum is congested by the earliest users and chronologically later users, especially the developing countries, have difficulty in obtaining access to it.

Where space is concerned, the aforesaid principles are applicable and are supplemented by procedures designed to guarantee equal rights for countries in utilizing the geostationary satellite orbit. These procedures may be summarized as follows :

- "advance publication" of information on all planned new satellite systems, in order that all countries may be informed and those which could be affected may make themselves known;
- coordination between countries with existing or planned systems liable to interfere with each other; this coordination becomes mandatory when the mutual interference exceeds a predetermined limit and must be conducted in accordance with a specific procedure in which the IFRB may be called upon to provide assistance.

In terrestrial as in space radiocommunications, some people interpret the fact that a certain protection is guaranteed to existing users to mean that, by granting chronological priority, the Regulations are based on the principle of "first come, first served". Yet such protection is essential for ensuring permanent service, particularly in space, where financial investments may be considerable. It should be noted, however, that this protection is bound up with the use of a frequency and that it disappears as soon as the use comes to an end, although this is not always the case, since the IFRB is not always

One way of avoiding all chronological priority consists in planning, that is to say, distributing a given band between stations and areas for immediate or future use.

So far, three kinds of planning have been conducted in the I.T.U., namely:

- an assignment plan, containing the frequencies and characteristics associated with every individual station, as in the case of LF/MF broadcasting and satellite broadcasting in the 11 GHz band.
- an allotment plan, containing the frequencies allotted to an area or a country which can be used by several unspecified stations situated in the area (or country) as in the case of the maritime and aeronautical mobile services;
- a seasonal plan drawn up four times a year, as in the case of long-distance HF broadcasting (international service).

A number of publications issued before WARC-79 was held, stressed its importance for the future development of communications. Other publications which appeared after the Conference demonstrated the volume of work accomplished and the results obtained. We will review these results in three areas, a) modifications to the Table of Frequency Allocations and the associated procedures designed to facilitate the application of these modifications; b) adoption of new procedures designed to facilitate access to the spectrum by the developing countries; c) the decision to convene conferences for planning the space services and short-wave broadcasting service.

Even before it began, the Conference was confronted with a North-South dispute in the preliminary discussions on the choice of the officers of the Conference, particularly its Chairman. Far from being a mere skirmish, these preliminary negotiations had the advantage of clearing the air and, in addition, of giving grounds for hope that some results may be obtained by both sides on the basis of negotiations. The negotiations were delicate and sometimes arduous and practically the entire future of the I.T.U. was at stake. In the end, compromises were found, even though they were not always clear, thus leaving the problems of their interpretation to future

The amendments made to the Table of Frequency Allocations will not be considered here, but they concern us insofar as they necessitated drawing up quite radical procedures to guarantee the same status and the same operational conditions for stations which must be moved elsewhere as a result of the new frequency band allocations. In addition, these amendments have been used as serious basic arguments in discussions on the principle of space and HF broadcasting planning.

The part of the spectrum comprising the high frequencies that allow economical communication over long distances is the one which gave rise to a great deal of discussion. Since this part of the spectrum is less heavily used than before by the fixed service for long-distance telephony, several countries proposed that part of the fixed service bands should be allocated to other services, such as broadcasting (international service), the maritime and aeronautical mobile services and the amateur service. These proposals were absolutely unacceptable to the developing countries, since for most of them high frequencies constitute the principal means of national communication. A practical problem also arose in that before the allocation of a band is changed from one service to another, new frequencies have to be found for each station operating in the transferred part of the band and each station has to be guaranteed the same status as before.

Side by side with discussions on the most appropriate way of finding these alternative frequencies, other debates took place, often in closed sessions of small informal groups, with a view to seeking a compromise on the radical proposals supported by the non-aligned countries concerning the distribution of the spectrum between the developed and the developing countries. Briefly, the solution consisted in a proposal that, since protection of the firstcomer was unavoidable, the HF bands should be divided into two parts, in one of which the stations of the developed countries would not be protected.

This was indeed a key proposal which, together with the proposals of principle advanced to refute it, could have affected the entire future of the I.T.U. The compromise reached consisted in a procedure which gives priority to the requirements of the developing countries without dividing up the spectrum. In a few words, this procedure consisted of the following:

any developing country can request the I.F.R.B. to find it a frequency and the Board deals with such requests as a matter of priority, before those of developed countries which are being processed, in addition, the I.F.R.B. must find a frequency within a prescribed time limit, even if it has to ask developed countries to shift their frequencies for this purpose.

In the case of procedures for displaced bands and those for the benefit of developing countries, the solutions adopted are viable only to the extent to which the basic instrument for their application, that is to say, the Master Frequency Register, is kept up to date to reflect the real use made of the spectrum. To this end the I.T.U. has mounted a large-scale operation which will take several years to carry out and will require considerable investments.

Two other subjects which gave rise to difficult debates were the planning of space services and of HF broadcasting. The planning of space services in itself comprises a series of subjects which have entailed controversies and even misunderstandings, such as the question of the life period of a satellite. In these debates, the allocation of bands for Earth-satellite links in the broadcasting satellite service was one of the most complex problems, owing to the wide difference of contingencies between the developed and the developing countries, between the developed countries themselves, between eastern and western countries and so forth. The difference of opinion as to principle was expressed, on the one hand, by those who regarded the planning of all the bands allocated to space services and the orbital positions as the only means of guaranteeing equal rights and access to the bands and to the orbit and, on the other hand, by those who considered that planning was premature and should in any case relate only to a single frequency band. This network of politico-legal-technical arguments was further complicated by a whole set of arguments advanced by the equatorial countries claiming a degree of sovereignty over the equatorial orbit. Nevertheless, the arguments put forward by the equatorial countries ran parallel with those of the developing countries in general, since they did not entail casting doubt on the principles laid down in the Convention with respect to equal rights and freedom of access to the orbit, but merely called for the convening of a conference to regulate the utilization of the orbit. Although the principle of convening a

necessary to decide first of all what the conference should do. The compromise then reached consisted in convening the conference by means of a resolution which might or might not be considered to have settled the problem, depending on the point of view adopted. In this Resolution, the Conference considered "that in the case of the geostationary-satellite orbit for space services, attention should be given to the relevant technical aspects concerning the special geographical situation of particular countries". Under the terms of reference assigned to it, the Space Conference has "to guarantee in practice for all countries equitable access to the geostationary-satellite orbit and the frequency bands allocated to space services". To this end, the Space Conference must "decide which space services and frequency bands should be planned" and "consider other possible approaches that could meet the objectives" of equitable access. In addition, the Conference must establish regulatory procedures in respect of unplanned services and frequency bands.

From the very outset, the use of the existing HF broadcasting bands gave rise to a general feeling of dissatisfaction due to the congestion of the bands and certain uses which were considered inappropriate. One proposed solution was to increase the bands allocated to HF broadcasting and another was to plan those bands. After it had been acknowledged that the many attempts at planning undertaken in the 1950s had been unsuccessful and that the existing seasonal planning procedure had certain shortcomings, a compromise was reached in the form of a Resolution to convene a planning conference. During discussions in small groups, several attempts were made to define the kind of planning that would be best suited to this type of service; it was finally agreed that a decision on the matter would be premature and should be left to the appropriate conference.

By establishing new relationships between the developed and the developing countries with respect to access to the spectrum and by deciding to plan in two such important areas as space and HF broadcasting, WARC-79 took fundamental decisions determining the future of the I.T.U. Nevertheless, the role and functions of the I.T.U. are not defined by conferences such as WARC-79, but by the supreme organ of the Union, the Plenipotentiary Conference, which meets approximately every seven years, the next meeting being scheduled for 1982.

The decisions of WARC-79 on the procedures described above will certainly not be reconsidered by the Plenipotentiary Conference, since the I.T.U. Administrative Council has already adopted measures for their implementation. This Council has also proposed to the Members of the Union a programme of conferences for forthcoming years, including the two planning conferences. On the basis of these decisions, some may see a need to specify the functions of the I.T.U. more clearly, not only because of the activities of other international organizations, but also to make it easier for future radio conferences to deal with regulatory questions. The review of the functions of the Union will not, perhaps, be confined to radiocommunications, but may involve an attempt to define new relationships between the developed and the developing countries, especially with a view to the transfer of technology through the I.T.U. Consultative Committees and to seeking new administrative and financial means of improving cooperation between countries. Any decisions taken in these areas might necessitate changes in the structures of the Union. The proposed programme of conferences is already so heavy that it might be necessary to revise the working methods of conferences, inter alia, by providing for committee meetings during the intervals between conference sessions. In contemplating new relationships between developed and developing countries, WARC-79 is following the normal trend in the evolution of international relations, since, as Marcel Boisard said some years ago, it is a matter of urgency that "the system governing contemporary international relations which for historical reasons originated in Europe, be made more universal in order to provide adequate tools for the objective interdependence of nations and to ensure world peace".